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EXAMINER	
REDDY, KARUNA P	

ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
05/30/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/586,134	MICHL ET AL.	
	Examiner	Art Unit	
	KARUNA P. REDDY	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 May 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *10,11 and 13-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *10,11 and 13-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/5/2008 has been entered.

   Claims 1-9, 12 and 19 are cancelled; and claim 10 is amended. Claims 10-11, and 13-18 are currently pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 10-11, 13-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rockrath et al (WO 01/12736).

   It is noted that WO 01/12736 (WO) is being utilized for date purposes. However, the US equivalent for WO, namely, Rockrath et al (US 6, 835, 420 B1) is referred to in the body of rejection below. All column and line citations are to the US equivalent.

   Rockrath et al disclose a binding agent comprising two functional groups which can enter into crosslinking reactions with complimentary functional groups in crosslinking agent. The binding agent has at least one olefinically unsaturated polysiloxane macromonomer which contains at least 3.0 double bonds per molecule (abstract). The

polysiloxane macromonomers have a number average molecular weight of from 2000 to 30,000 (column 6, lines 64-67; column 7, line 1). The olefinically unsaturated double bonds of the polysiloxane macromonomers for inventive use are present in acrylic, methacrylic, vinyl, and/or allyl groups (column 7, lines 21-22). The monomer mixture is polymerized with one or more polymerization initiators (column 10, lines 61-63) and includes dialkyl peroxides, t-butyl perethylhexanoate and azobisisobutyronitrile (column 11, lines 5-11). Suitable substrates include fiber composites, glass fibers and rock wool (column 19, lines 33-40). See example 1, wherein the coating composition comprises hexaacrylate-functional polysiloxane macromonomer in the monomer mixture and initiator solution of t-butyl perethylhexanoate in amount of about 2% by weight relative to the monomer content (column 24, lines 16-44).

Rockrath et al differ with respect to polymerizing the polymerizable mixture prior to contacting the substrate.

However, court held that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to coat i.e. contact the substrate with polymerizable mixture prior to polymerization, instead of contacting the substrate after polymerization of polymerizable mixture, absent evidence of unexpected results.

4. Claims 10-11, 13-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baumgart et al (WO 00/26309).

It is noted that WO 00/26309 (WO) is being utilized for date purposes. However, US equivalent for WO, namely, Baumgart et al (US 6, 534, 185 B1) is referred to in the body of rejection below. All column and line citations are to the US equivalent.

Baumgart et al disclose a coating composition containing at least one polysiloxane macromonomer, in copolymerized form, as binder (abstract). Suitable polysiloxane macromonomers are those having a molecular weight of from 1,000 to 40,000 (column 4, lines 53-55). Examples of macromonomers include acryloxysilane containing vinyl monomers having ethylenically unsaturated double bond content (column 4, lines 64-67). The coating composition can be used in the field of coating of furniture and industrial coating (column 8, lines 31-34). It is possible to use substrates of glass, wood (column 8, lines 51-53). Examples of suitable polymerization initiators are those which form free radicals such as tert-butyl peroxyethyl hexanoate, benzoyl peroxide and azobisiso-butyronitrile. The initiators are used preferably in an amount of from 2 to 25% by weight (column 6, lines 39-45).

Baumgart et al differ with respect to polymerizing the polymerizable mixture prior to coating the substrate.

However, court held that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to coat i.e. contact the substrate with polymerizable mixture prior to polymerization, instead of contacting the substrate after polymerization of the polymerizable mixture, absent evidence of unexpected results.

5. Claims 10-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arkens et al (US 5, 661, 213).

Arkens et al disclose aqueous coating composition containing a polyacid and a polyol. The composition may be used as a binder for heat resistant nonwovens such as fiber glass (abstract). The addition polymer must contain at least two carboxylic acid groups such as (meth)acrylic acid, anhydride groups or salts thereof (column 4, lines 1-2). The polyol may be a compound with a molecular weight less than about 1000 bearing at least two hydroxyl groups such as an addition polymer containing at least two hydroxyl groups such as homo- or copolymers of hydroxyethyl (meth)acrylate, hydroxypropyl (meth)acrylate and the like (column 6, lines 1-14). The addition polymer containing at least two carboxylic acid groups may have a molecular weight preferably from about 10,000 to 100,000 (column 4, lines 28-29). The polymerization reaction may be initiated by using the thermal decomposition of an initiator to generate free radicals to effect polymerization (column 5, lines 6-11). In one embodiment, the addition polymer would contain both carboxyl, anhydride or salts thereof functionality and hydroxyl functionality (column 6, lines 61-65). The curable aqueous composition may be used as a binder for heat resistant nonwoven fabrics such as certain polyester fibers, rayon fibers and glass fibers (column 8, lines 24-29). The heat resistant nonwovens may be used for applications such as insulation batts or rolls, as reinforcement scrim in cementitious and non-cementitious coatings for masonry (column 8, lines 61-67).

Arkens et al differ with respect to polymerizing the monomers prior to coating the substrate.

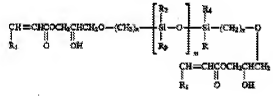
However, court held that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See In re Burhans,

154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to coat the substrate with mixture containing macromonomer and radical initiator prior to polymerization, instead of coating the substrate after polymerization of mixture containing a macromonomer and radical initiator, absent evidence of unexpected results.

6. Claims 10-11, 13-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelke et al (US 5, 686, 531) in view of Rockrath et al (WO 01/12736).

It is noted that WO 01/12736 (WO) is being utilized for date purposes. However, US equivalent for WO, namely, Rockrath et al (US 6, 835, 420 B1) is referred to in the body of rejection below. All column and line citations are to the US equivalent.

Engelke et al disclose a coating agent comprising a binding agent containing at least one acrylate copolymer (A) with carboxyl group and/or at least one acrylate copolymer (B) with epoxide groups being obtained by solution polymerization of polysiloxane macromonomers having a number average molecular weight of 1,000 to 40,000 and an average 0.5 to 2.5 ethylenically unsaturated double bonds per molecule (abstract). The polysiloxane macromonomers of the following formula are preferably employed and read



on the free radically polymerizable groups of claim 12. Suitable free radical initiators are organic peroxides, aliphatic azo compounds. The amount of initiator in most cases is

0.1 to 15% by weight based on the amount of monomer to be processed (column 10, line 62; column 11, lines 7-10).

Engelke et al differ with respect to polymerizing the monomers prior to coating the substrate; and is silent with respect to contacting fibrous and/or granular substrates with polymerization reaction mixture.

However, court held that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to coat the substrate with a mixture containing polysiloxane macromonomer and radical initiator prior to polymerization, instead of coating the substrate after polymerization of mixture containing polysiloxane macromonomer and radical initiator, absent evidence of unexpected results.

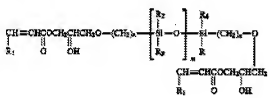
With respect to contacting the composition with fibrous and/or granular substrates, Rockrath et al teach a binding agent comprising at least one olefinically unsaturated polysiloxane macromonomer which contains at least 3.0 double bonds per molecule (abstract). The polysiloxane macromonomers have a number average molecular weight of from 2000 to 30,000 (column 6, lines 64-67; column 7, line 1). The olefinically unsaturated double bonds of the polysiloxane macromonomers for inventive use are present in acrylic, methacrylic, vinyl, and/or allyl groups (column 7, lines 21-22). The monomer mixture is polymerized with one or more polymerization initiators (column 10, lines 61-63) and includes dialkyl peroxides, t-butyl perethylhexanoate and azobisisobutyronitrile (column 11, lines 5-11). Suitable substrates include fiber composites, glass fibers and rock wool (column 19, lines 33-40). Therefore, it would have been obvious to contact fibrous and/or granular substrates such as fiber

composites, glass fibers and rock wool with the monomer mixture, of Engelke et al comprising polysiloxane macromonomer, because the monomer mixture of Engelke et al is substantially similar to that of Rockrath et al and Rockrath et al has proven successfully that the coating composition can be used to coat fibrous and/or granular substrates such as fiber composites, glass fibers and rock wool and one of ordinary skill in the art would expect the polymerization of monomer mixture, of Engelke et al to work on the surface of a fibrous and/or granular substrate, motivated by expectation of success.

7. Claims 10-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Engelke et al (US 5, 686, 531) in view of Baumgart et al (WO 00/26309).

It is noted that WO 00/26309 (WO) is being utilized for date purposes. However, US equivalent for WO, namely, Baumgart et al (US 6, 534, 185 B1) is referred to in the body of rejection below. All column and line citations are to the US equivalent.

Engelke et al disclose a coating agent comprising a binding agent containing at least one acrylate copolymer (A) with carboxyl group and/or at least one acrylate copolymer (B) with epoxide groups being obtained by solution polymerization of polysiloxane macromonomers having a number average molecular weight of 1,000 to 40,000 and an average 0.5 to 2.5 ethylenically unsaturated double bonds per molecule (abstract). The polysiloxane macromonomers of the following formula are preferably employed and read



on the free radically polymerizable groups of claim 12. Suitable free radical initiators are organic peroxides, aliphatic azo compounds. The amount of initiator in most cases is 0.1 to 15% by weight based on the amount of monomer to be processed (column 10, line 62; column 11, lines 7-10).

Engelke et al differ with respect to polymerizing the monomers prior to coating the substrate; and is silent with respect to contacting fibrous and/or granular substrates with polymerization reaction mixture.

However, court held that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results. See In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946). Therefore, it would have been obvious to coat the substrate monomer mixture containing polysiloxane macromonomer and radical initiator prior to polymerization, instead of coating the substrate after polymerization of mixture containing polysiloxane macromonomer and radical initiator, absent evidence of unexpected results.

With respect to contacting the composition with fibrous and/or granular substrates, Baumgart et al teach a coating composition containing at least one polysiloxane macromonomer as binder (abstract). Suitable polysiloxane macromonomers are those having a molecular weight of from 1,000 to 40,000 (column 4, lines 53-55). Examples of macromonomers include acryloxysilane containing vinyl monomers having ethylenically unsaturated double bond content (column 4, lines 64-67). The coating composition can be used in the field of coating of furniture and industrial coating (column 8, lines 31-34). It is possible to use substrates of glass, wood and metal (column 8, lines 51-53). Examples of suitable polymerization initiators are those which form free radicals such as tert-butyl peroxyethyl hexanoate, benzoyl

peroxide and azobisiso-butyronitrile. The initiators are used preferably in an amount of from 2 to 25% by weight (column 6, lines 39-45). Therefore, it would have been obvious to contact fibrous and/or granular substrates such as fiber composites, glass fibers and rock wool with the monomer mixture, of Engelke et al, comprising polysiloxane macromonomer, because the monomer mixture of Engelke et al is substantially similar to that of Baumgart et al and Baumgart et al has proven successfully that the coating composition can be used to coat fibrous and/or granular substrates such as fiber composites, glass fibers and rock wool and one of ordinary skill in the art would expect the polymerization of monomer mixture, of Engelke et al, to work on the surface of a fibrous and/or granular substrate, motivated by expectation of success.

8. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arkens et al (US 5, 661, 213) in view of Rockrath et al (US 6, 835, 420 B1).

The discussion with respect to Arkens et al in paragraph 10 above is incorporated herein by reference. Furthermore, the composition can comprise polyacid containing at least two carboxylic acid groups or the salts thereof and a highly reactive polyol containing at least two hydroxyl groups wherein the ratio of the number of equivalents of said carboxylic groups, anhydride groups or salts thereof to the number of equivalents of said hydroxyl groups is from about 1/0.01 to about 1/3 (column 7, lines 18-26) and reads on the percentages of claim 15.

Arkens et al is silent with respect to reacting the product obtained with at least one epoxy compound and subsequently reacting with polyisocyanate.

However, Rockrath et al teach binding agent comprising two functional groups which can enter into crosslinking reactions with complimentary functional groups in

crosslinking agent. The binding agent has at least one olefinically unsaturated polysiloxane macromonomer which contains at least 3.0 double bonds per molecule (abstract). For thermally sensitive substrates it is advantageous to choose a temperature range which does not exceed 100^0C. In view of these temperature conditions, hydroxyl groups and isocyanate groups or carboxyl and epoxy groups have proven advantageous as complimentary functional groups (column 8, lines 54-59). Therefore, it would have been obvious to add polyisocyanate as a crosslinking agent to the binder of Arkens et al after reacting with epoxy crosslinker to cure the binder at low temperatures because the binder of Arkens et al comprises both carboxyl and hydroxyl groups and Rockrath et al have proven successfully that carboxyl and epoxy or hydroxyl and isocyanato are advantageous as complimentary functional groups in the binder for curing at low temperatures and one of ordinary skill in the art would expect such crosslinkers to work for the binder of Arkens et al, motivated by expectation of success.

9. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al (US 5, 096, 938).

   The rejection is adequately set forth in paragraph 13 of office action mailed 1/4/2008.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beck et al (US 5, 096, 938) in view of Rockrath et al (US 6, 835, 420 B1).

    The rejection is adequately set forth in paragraph 14 of office action mailed 1/4/2008.

Response to Arguments

11. Applicant's arguments, see page 5, lines 13-14, filed 5/5/2008, with respect to rejection of claim 12 under 35 U.S.C. § 112 first paragraph, have been fully considered and is withdrawn in view of the cancellation of claim 12.

12. Applicant's arguments, see page 5, line 15, filed 5/5/2008, with respect to rejection of claim 10 and the dependent claims 11-19 under 35 U.S.C. § 112 second paragraph, has been fully considered and is withdrawn in view of the amendment of claim 10.

13. Applicant's arguments with respect to rejection of claims 10-14 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Rockrath et al (US 6, 835, 420 B1); Claims 10-14 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Baumgart et al (US 6, 534, 185 B1); claims 10-14 under 35 U.S.C. 103(a) as being unpatentable over Arkens et al (US 5, 661, 213); Claims 10-14 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Engelke et al (US 5, 686, 531) in view of Rockrath et al (US 6, 835, 420 B1); claims 10-14 and 17-18 under 35 U.S.C. 103(a) as being unpatentable over Engelke et al (US 5, 686, 531) in view of Baumgart et al (US 6, 534, 185 B1); claims 15-16 and 19 under 35 U.S.C. 103(a) as being unpatentable over Arkens et al (US 5, 661, 213) in view of Rockrath et al (US 6, 835, 420 B1), have been considered but are moot in view of the new ground(s) of rejection.

Since, however, previously cited prior art is still being applied, although using new arguments, it is deemed appropriate to address applicant's arguments with respect to these references. (see paragraph 14 below).

14. Applicant's arguments filed 5/5/2008 have been fully considered but they are not persuasive. Specifically, applicant argues that (A) Rockrath's coating material is merely a coating material, and not described or suggested as a binder for forming an article; (B) example 1 of Rockrath describes preparation of a polyacrylate as binding agent which is only one component of Rockrath's coating material; (C) Baumgart does not disclose or suggest using composition as a binding system to form an article; (D) Arkens fails to describe or suggest that a multifunctional macromonomer and a radical polymerization initiator can be used as a binding system for fibrous and/or granular substrates; (E) Beck discloses a radiation curable coating material and fails to describe a binding system as disclosed in present claim 10; (F) phenothiazine is known as a photoinitiator and not a radical initiator; and (G) there are several instances where applicant argues that binding system/agent as claimed is not disclosed in the cited art.

With respect to (A), attention is drawn to abstract wherein it specifically teaches that coating material contains a binding agent containing at least one olefinically unsaturated polysiloxane macromonomer.

With respect to (B), independent claim 10 uses transitional phrase "comprises" to describe the polymerizable mixture and "comprising" to define the method of forming an article. Thus, polymerizable mixture and the process of forming an article do not exclude additional, unrecited elements or method steps.

With respect to (C), attention is drawn to abstract where Baumgart specifically teaches that the composition comprises a copolymer containing at least one polysiloxane macromonomer as binder.

With respect to (D) attention is drawn to col. 8, lines 23-29, where it specifically teaches that the composition can be used as a binder for non-wovens which include fibrous substrates.

With respect to (E), all limitations of process claim 10 are met except for contacting a fibrous and/or granular substrates with the composition. Court held that claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). Thus, it is the examiner's position that claiming of a new use as a binding system, for a coating composition of Beck et al prepared using similar process steps does not make the present claims patentable.

With respect to (F), there is no mention in Fujioka that phenothiazine is a photoinitiator. Even if it was, applicant's attention is drawn to abstract of Fujioka, where it discloses that title compound is obtained by mixing a monoalcohol having a radical-polymerizable unsaturated group and a polymerization initiator such as phenothiazine. Thus, it is apparent that phenothiazine generates radicals during the polymerization process.

With respect to (G), it is noted that, while cited art refers to a binding agent or binder, there is no mention of a binding system/agent in the present claims as recited.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karuna P Reddy/
Examiner, Art Unit 1796

/VASUDEVAN S. JAGANNATHAN/
Supervisory Patent Examiner, Art Unit 1796